What is claimed is:

1   1.   A method for managing content caches distributed on a network, comprising the steps

2   of:

3   for each content publisher of a plurality of content publishers,

4   receiving at a gateway that belongs to a set of one or more gateways, a control

5   signal specifying an action related to content provided by the content

6   publisher that is cached at a plurality of locations distributed on the

7   network; and

8   causing the control signal to be transmitted from the gateway to the plurality

9   of locations for the specified action to be performed on the content at

10   the plurality of locations.

1   2.   The method of claim 1, further comprising, between the steps of receiving and

2   causing, the step of:

3   validating the control signal by verifying that it originated from an entity authorized

4   to specify an action related to the content that is cached at the plurality of

5   locations.

1   3.   The method of claim 2 wherein the steps of receiving the control signal, validating the

2   control signal, and causing the control signal to be transmitted are performed by a

3   trusted third party.

1   4.   The method of claim 2 wherein a group of network service providers are associated as

2   a cooperative that provides network services, and wherein the steps of receiving the

3   control signal, validating the control signal, and causing the control signal to be

4   transmitted are performed by a gateway server controlled by the cooperative.

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1   5.   The method of claim 4 wherein at least one member of the cooperative is from a

2   group consisting of a network owner, a telecommunications carrier, a network access

3   provider, and a distribution network owner that caches content at a plurality of

4   locations distributed on the network.

1   6.   The method of claim 1 wherein the step of causing the control signal to be transmitted

2   to the plurality of locations comprises causing the control signal to be transmitted to

3   one or more control gateways within one or more distribution networks that cache

4   content at a plurality of locations distributed on the network.

1   7.   The method of claim 1, further comprising the step of:

2   causing the control signal to be transmitted to one or more control gateways within

3   one or more access provider networks for forwarding to one or more edge

4   servers that serve requested content.

1   8.   The method of claim 1 wherein the step of receiving a control signal comprises

2   receiving a control signal from a content hosting provider that received the control

3   signal from a content publisher, whereby the content publisher can affect, with the

4   control signal, content provided by the content publisher that is cached at the plurality

5   of locations distributed on the network.

1   9.   The method of claim 1 wherein the action specifies a modification to the content that

2   is cached at the plurality of locations distributed on the network and wherein the step

3   of causing the control signal to be transmitted causes the content to be modified at the

4   plurality of locations distributed on the network according to the action.

1 10.   The method of claim 1 wherein the action specifies an addition of or deletion of

2   cached content and wherein the step of causing the control signal to be transmitted

3   causes the cached content to be added to or deleted from the plurality of locations

4   distributed on the network according to the action.

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1   11.   The method of claim 1 wherein a group of network service providers are associated as

2   a cooperative that provides network services, and wherein the steps of receiving the

3   control signal, and causing the control signal to be transmitted are performed by a

4   gateway server controlled by the cooperative.

1   12.   The method of claim 11 wherein at least one member of the cooperative is from a

2   group consisting of a network owner, a telecommunications carrier, a network access

3   provider, a content hosting provider, and a distribution network owner that caches

4   content at a plurality of locations distributed on the network.

1   13.   The method of claim 11, further comprising the steps of:

2   receiving, by a trusted third party, revenue for the network services provided; and

3   distributing the revenue to members of the cooperative based on member contribution

4   to the network services provided.

1   14.   The method of claim 13 wherein the step of distributing the revenue to members of

2   the cooperative is based on the quality of the member contribution to the network

3   services provided.

1   15.   The method of claim 11, further comprising the steps of:

2   receiving, by the cooperative, revenue for the network services provided;

3   distributing the revenue to members of the cooperative based on member contribution

4   to the network services provided.

1   16.   The method of claim 15 wherein the step of distributing the revenue to members of

2   the cooperative is based on the quality of the member contribution to the network

3   services provided.

1   17.   A method for managing content caches distributed on a network, comprising the steps

2   of:

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3   receiving at a gateway that belongs to a set of one or more gateways, activity records

4   that contain statistics about requests for content that resides in caches at a

5   plurality of locations distributed on the network, wherein the caches include

6   content provided by a plurality of content publishers;

7   segregating the statistics based on which content publisher provided the content

8   associated with the statistics; and

9   providing to each content publisher statistics corresponding to content provided by

10   that content publisher.

1   18.   The method of claim 17, further comprising, prior to the step of providing statistics to

2   each content publisher, the step of:

3   creating an activity log comprising statistics corresponding to content provided by a

4   specific content publisher.

1   19.   The method of claim 17 wherein the step of receiving activity records comprises

2   receiving the activity records from one or more distribution network servers that

3   received the activity records from one or more access provider gateways, wherein the

4   distribution network caches content at a plurality of locations distributed on the

5   network.

1   20.   The method of claim 19 wherein the step of receiving the activity records from one or

2   more distribution network servers comprises receiving activity records originating at

3   one or more edge servers.

1   21.   The method of claim 19 further comprising the step of:

2   aggregating the activity records from a plurality of edge servers at the one or more

3   access provider gateways.

1   22.   The method of claim 17 wherein the step of receiving activity records comprises

2   receiving activity records originating at one or more edge servers.

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1   23.   The method of claim 17 wherein the content publisher can monitor, based on the

2   statistics, requests for access to its content that is cached at a plurality of locations

3   distributed on the network.

1   24.   The method of claim 17 wherein the step of receiving activity records comprises

2   receiving the activity records from one or more access provider gateways.

1   25.   The method of claim 17 wherein activity records are received that are related to

2   requests for content provided by two or more content publishers that is cached at a

3   plurality of locations distributed on the network, and further comprising the step of:

4   forwarding the activity records to a trusted third party wherein the third party

5   aggregates the activity records based on which content publisher provided the

6   content associated with the statistics; and

7   wherein the step of providing statistics is performed by the third party by transmitting

8   the statistics to a gateway at one or more hosting providers associated with

9   that content publisher.

1   26.   The method of claim 17 wherein a group of network service providers are associated

2   as a cooperative that provides network services, and wherein the step of providing

3   statistics is performed by transmitting the statistics to a gateway controlled by the

4   cooperative.

1   27.   The method of claim 26 wherein at least one member of the cooperative is from a

2   group consisting of a network owner, a telecommunications carrier, a network access

3   provider, a content hosting provider, and a distribution network owner that caches

4   content at a plurality of locations distributed on the network.

1   28.   The method of claim 26, further comprising the steps of:

2   receiving, by a trusted third party, revenue for the network services provided; and

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3   distributing the revenue to members of the cooperative based on member contribution

4   to the network services provided.

1   29.   The method of claim 28 wherein the step of distributing the revenue to members of

2   the cooperative is based on the quality of the member contribution to the network

3   services provided.

1   30.   The method of claim 26, further comprising the steps of:

2   receiving, by the cooperative, revenue for the network services provided;

3   distributing the revenue to members of the cooperative based on member contribution

4   to the network services provided.

1   31.   The method of claim 30 wherein the step of distributing the revenue to members of

2   the cooperative is based on the quality of the member contribution to the network

3   services provided.

1   32.   The method of claim 17 further comprising the steps of:

2   receiving at a second gateway an activity log comprising statistics corresponding to

3   content provided by a specific content publisher; and

4   transmitting the activity log to the content publisher.

1   33.   The method of claim 32 wherein the step of transmitting the activity log to the content

2   publisher is in response to a request from the content publisher.

1   34.   An apparatus for managing content caches distributed on a network, comprising:

2   a memory;

3   a network interface configured for receiving a control signal specifying an action

4   related to content provided by a content publisher that is cached at a plurality

5   of locations distributed on the network; and

6   one or more processors coupled to the memory and the network interface and

7   configured to execute one or more sequence of instructions for causing the

8   control signal to be transmitted to the plurality of locations for the specified

9   action to be performed on the content at the plurality of locations.

1   35.   The apparatus of claim 34 wherein the one or more processors are further configured

2   to execute one or more sequence of instructions for validating the control signal by

3   verifying that it originated from an entity authorized to specify an action related to the

4   content that is cached at the plurality of locations.

1   36.   The apparatus of claim 34 wherein the one or more processors are further configured

2   to execute one or more sequence of instructions for causing the control signal to be

3   transmitted to one or more control gateways within one or more access provider

4   networks for forwarding to one or more edge servers that serve requested content.

1   37.   The apparatus of claim 34 wherein a group of network service providers are

2   associated as a cooperative organization that provides network services to content

3   hosting providers that serve content from content publishers, and wherein the

4   apparatus is managed by the cooperative organization.

1   38.   The apparatus of claim 37 wherein at least one member of the cooperative

2   organization is from a group consisting of a network owner, a telecommunications

3   carrier, a network access provider, and a distribution network owner that caches

4   content at a plurality of locations distributed on the network.

1   39.   An apparatus for monitoring requests for content cached distributively on a network,

2   comprising:

3   a memory;

4   a network interface configured for receiving activity records that contain statistics

5   about requests for content that resides in caches at a plurality of locations

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6   distributed on the network, wherein the caches include content provided by a

7   plurality of content publishers; and

8   one or more processors coupled to the memory and the network interface and

9   configured to execute one or more sequence of instructions for segregating the

10   statistics based on which content publisher provided the content associated

11   with the statistics and providing to each content publisher statistics

12   corresponding to content provided by that content publisher.

1   40.   The apparatus of claim 39 wherein a group of network service providers are

2   associated as a cooperative organization that provides network services, and wherein

3   the apparatus is managed by the cooperative organization.

1   41.   The apparatus of claim 40 wherein at least one member of the cooperative

2   organization is from a group consisting of a network owner, a telecommunications

3   carrier, a network access provider, and a distribution network owner that caches

4   content at a plurality of locations distributed on the network.

1   42.   A computer-readable medium carrying one or more sequences of instructions for

2   managing content caches on a network, wherein execution of the one or more

3   sequences of instructions by one or more processors causes the one or more

4   processors to perform the steps of:

5   for each content publisher of a plurality of content publishers,

6   receiving at a gateway that belongs to a set of one or more gateways, a control

7   signal specifying an action related to content provided by the content

8   publisher that is cached at a plurality of locations distributed on the

9   network; and

10		causing the control signal to be transmitted from the gateway to the plurality
11		of locations for the specified action to be performed on the content at
12		the plurality of locations.
1	43.	The computer-readable medium of claim 42 wherein execution of the one or more
2		sequences of instructions by one or more processors causes the one or more
3		processors to perform the step of:
4		validating the control signal by verifying that it originated from an entity authorized
5		to specify an action related to the content that is cached at the plurality of
6		locations.
7	44.	The computer-readable medium of claim 42 wherein execution of the one or more
8		sequences of instructions by one or more processors causes the one or more
9		processors to perform the steps of:
10		causing the control signal to be transmitted to one or more control gateways within
11		one or more access provider networks for forwarding to one or more edge
12		servers that serve requested content.
1	45.	The computer-readable medium of claim 42 wherein execution of the one or more
2		sequences of instructions by one or more processors causes the one or more
3		processors to perform the step of receiving the control signal by receiving a control
4		signal originating from a content publisher, whereby the content publisher can affect,
5		with the control signal, content provided by the content publisher that is cached at the
6		plurality of locations distributed on the network.
1	46.	The computer readable medium of claim 42 wherein the action specifies a
2		modification to the cached content and wherein the execution of the one or more
3		sequences of instructions by one or more processors causes the one or more

4   processors to perform the step of causing the control signal to be transmitted such that

5   the cached content is modified at the plurality of locations according to the action.

1   47.   The computer readable medium of claim 42 wherein the action specifies an addition

2   of or deletion of cached content and wherein the step of causing the control signal to

3   be transmitted causes the cached content to be added to or deleted from the plurality

4   of locations distributed on the network according to the action.

1   48.   A computer-readable medium carrying one or more sequences of instructions for

2   monitoring requests for content cached distributively on a network, wherein execution

3   of the one or more sequences of instructions by one or more processors causes the one

4   or more processors to perform the steps of:

5   receiving at a gateway that belongs to a set of one or more gateways, activity records

6   that contain statistics about requests for content that resides in caches at a

7   plurality of locations distributed on the network, wherein the caches include

8   content provided by a plurality of content publishers;

9   segregating the statistics based on which content publisher provided the content

10   associated with the statistics; and

11   providing to each content publisher statistics corresponding to content provided by

12   that content publisher.

1   49.   The computer-readable medium of claim 48, wherein execution of the one or more

2   sequences of instructions by one or more processors causes the one or more

3   processors to perform, prior to the step of providing statistics to each content

4   publisher, the step of:

5   creating an activity log comprising statistics corresponding to content provided by a

6   specific content publisher.

1   50.   A method for providing network services over a network, comprising the steps of:

2   monitoring, while providing the network services, performance statistics of a network

3   system that includes components managed by a plurality of parties; and

4   determining how to distribute revenue collected for the network services based at least

5   in part on the performance statistics.

1   51.   The method of claim 50 wherein the network services provided include defining a

2   first network service offering related to delivery of content over the network system

3   by the plurality of parties and the step of monitoring performance statistics is

4   performed while providing the first network service offering.

1   52.   The method of claim 51 wherein the network services provided include marketing the

2   first network service offering and the step of determining how to distribute revenue is

3   performed based at least in part on participation in marketing of the first network

4   service offering.

1   53.   The method of claim 50 wherein the network services provided include defining

2   interoperability standards for the network services provided over the network system

3   by the plurality of parties and the step of determining how to distribute revenue is

4   performed based at least in part on participation in defining the interoperability

5   standards.

1   54.   The method of claim 50 wherein the network services provided include defining

2   billing policies for the network services provided over the network system by the

3   plurality of parties and the step of determining how to distribute revenue is performed

4   based at least in part on adherence to the billing policies by the plurality of parties.

5   55.   A method for improving communication among a plurality of parties providing

6   distribution services over a network for content that is cached at a plurality of

7   locations, comprising:

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8   using a cooperative organization to allow a content publisher to specify operations

9   performed on content provided by the content publisher that resides in caches

10   not controlled by the content publisher, by receiving content control

11   information associated with the operations at a device controlled by the

12   cooperative organization for distribution to the caches.

1   56.   A method for improving communication among a plurality of parties providing

2   distribution services over a network for content that is cached at a plurality of

3   locations, comprising:

4   using a cooperative organization to allow a content publisher to monitor access to

5   content provided by the content publisher that resides in caches not controlled

6   by the content publisher, by providing to each content publisher of a plurality

7   of content publishers, information about requests for access to the content

8   provided by that content publisher, the information being collected and

9   aggregated by the cooperative organization according to which content

10   publisher provided the content associated with the information.

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